DEPARTMENT OF THE ARMY
HEADQUARTERS, UNITED STATES ARMY MEDICAL COMMAND
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Medical Services

U.S. ARMY MEDICAL COMMAND RADIATION PROTECTION PROGRAM

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CHAPTER 1

INTRODUCTION

1-1. HISTORY. This is the first printing of this publication.

1-2. PURPOSE. This regulation implements the policies and procedures established in Army Regulation (AR) 11-9 and AR 40-5 as they relate to radiation uses within the U.S. Army Medical Command (MEDCOM) and establishes the MEDCOM Radiation Protection Program (RPP). Its objective is to ensure that radiation sources within the MEDCOM are used safely and that MEDCOM organizations comply with all Federal, DOD, and DA regulations. This regulation is applicable to all MEDCOM organizations and installations worldwide.

1-3. REFERENCES. A list of references is provided in Appendix A.

1-4. EXPLANATION OF TERMS. Abbreviations and special terms used in this regulation are explained in the glossary.

1-5. RESPONSIBILITIES.

a. The Commanding General (CG), MEDCOM—

(1) Will designate, in writing, a person to be the MEDCOM Radiation Protection Staff Officer (RPSO)

(2) Will issue Army Radiation Authorizations (ARAs) to MEDCOM organizations in accordance with AR 11-9 and Chapter 2 of this regulation.

(3) Will ensure that subordinate commands possessing army radioactive commodities comply with conditions of radioactive commodity NRC licenses and ARAs held by the U.S. Army Materiel Command (AMC).

(4) May designate a MEDCOM Radiation Protection Committee (MRPC), if needed.

b. The Surgeon General (TSG) will—

(1) Approve the use of investigational radiopharmaceuticals in accordance with AR 40-7.

(2) Approve the use of radioactive material in clinical investigations in accordance with AR 40-38.

(3) Approve the use of human volunteers for radiation studies in accordance with AR 70-25.

c. The Radiological Hygiene Consultant to TSG will—

(1) Recommend Army radiation protection personnel exposure standards to TSG as necessary.

(2) Ensure that Army radiological health guidelines for deployment operations are developed and provided to TSG for promulgation as necessary.

(3) Act on potential overexposure notifications from the U.S. Army Ionizing Radiation Dosimetry Branch (AIRDB).

(4) Review investigations of alleged overexposures and make the final dose assignment.

(5) Advise TSG on the medical and health aspects of exposure to ionizing radiation.

d. Commanders of medical commands outside the continental United State (OCONUS) will—

(1) Ensure that all subordinate medical commands comply with this regulation.

(2) Ensure that subordinate commands possessing army radioactive commodities comply with conditions of the AMC-held radioactive commodity NRC licenses and ARAs.

e. The MEDCOM RPSO will—

(1) Act as liaison with the U.S. Nuclear Regulatory Commission (NRC) for Army medical licensing.

(2) Establish and provide staff oversight of the MEDCOM RPP.

(3) Advise the Commander, MEDCOM and the MEDCOM Staff concerning radiation protection issues within the command.

(4) Survey, or request a survey of, the U.S. Army Center for Health Promotion and Preventive Medicine (USACHPPM) at least once every three years for compliance with applicable radiation protection and health regulations and guidance.

(5) Serve as the MEDCOM radiation protection point-of-contact.

f. Commanders, MEDCOM Major Subordinate Commands (MSCs) will—

(1) Designate, in writing, a person to act as the Command Radiation Protection Officer (CRPO). If the MSC has an NRC License or Army Radiation Authorization (ARA), the RPO designated on the NRC license or ARA will be the CRPO.

(2) Ensure that all subordinate units comply with this regulation.

g. The Commandant, U.S. Army Medical Department Center and School (AMEDDC&S) will Prepare training modules, in coordination with CG, Training and Doctrine Command and CG, AMC concerning the health hazards of, protection from, and medical treatment of injuries caused by U.S. and foreign radiation sources that may expose Army personnel during deployment.

h. The Commander, USACHPPM will—

(1) Survey each installation and each NRC licensee, Army reactor permit holder, and ARA holder [except U.S. Army Medical Department Activities (MEDDACs) which will be surveyed by the Regional Medical Commands (RMCs)] at least once every three years for compliance with applicable radiation protection and health regulations and guidance.

(2) Review NRC license and ARA applications and amendments forwarded from MEDCOM for adequacy and compliance with Army, DOD, and Federal

requirements. The applications and amendments will be processed as specified in Chapter 2 of this regulation.

(3) Maintain an Army wide archive of NRC licenses, applications, and amendments; supporting documents; and communication between the NRC and the licensees as provided by the Major Army Commands (MACOMs) in accordance with AR 11-9.

(4) Maintain an Army wide archive of ARAs, applications, and amendments; supporting documents; and communication between the MACOMs and the authorization holder as provided by the MACOMs in accordance with AR 11-9.

(5) Investigate alleged non-ionizing radiation overexposures in accordance with AR 10-3, AR 40-5, and AR 385-40.

(6) Maintain an Army wide archive of all non-ionizing radiation overexposure cases and incident investigation reports for use in future comparisons and for historical significance.

(7) Investigate incidents of Electromagnetic Interference (EMI) and Electromagnetic Compatibility (EMC) problems in medical treatment facilities (MTFs) and other incidents relating to MEDCOM electrical and electronic equipment.

(8) Survey each installation’s laser and radiofrequency programs at least once every three years for compliance with applicable non-ionizing radiation safety and health regulations and industry consensus standards.

(9) Perform radiation hazard evaluation on all Army materiel that emits non-ionizing radiation IAW AR 11-9 and AR 40-5.

(10) Maintain records of surveys, reports, calculations, and control measures for each type-classified radiofrequency (RF) or laser/optical radiation emitter evaluated.

(11) Provide non-ionizing radiation protection training to Army Radiation Protection Officers (RPOs) and Laser Safety Officers (LSOs).

(12) Provide basic RPO training for personnel assigned as RPOs at small MTFs that possess only x-ray systems.

(13) Perform health hazards assessments (HHAs) for commodities and systems that emit radiation or contain radioactive material as early as practical in development and before fielding.

(14) Provide in-vitro radiation bioassay services that comply with criteria of the American National Standards Institute (ANSI) (see ANSI N13.30) on a cost-reimbursable basis.

(15) Provide technical assistance in radiation protection issues as requested by other Army agencies.

i. Each RMC Commander will—

(1) Perform surveys of medical, dental, and veterinary x-ray systems within their region as specified in Technical Bulletin, Medical (TB MED) 521 at facilities that do not have a qualified individual on staff.

(2) Review the radiation protection programs (RPPs) and image quality control programs at each facility where the x-ray surveys required in paragraph (1) above are performed.

(3) Survey each MEDDAC that possesses an NRC License and/or ARA at least once every three years for compliance with applicable radiation protection and health regulations and guidance.

(4) Review NRC license applications and amendments and ARA applications and amendments from MTFs within their region and forward them to the MEDCOM or the NRC in accordance with chapter 2 of this regulation.

(5) Provide technical assistance regarding radiation protection issues to other MTFs within their region.

j. Each MEDCOM Installation Commander will—

(1) Designate, in writing, a qualified individual to act as the Installation RPO in accordance with (IAW) AR 11-9.

(2) Ensure that activities possessing army radioactive commodities on the installation comply with conditions of the AMC radioactive commodity NRC licenses and ARAs.

(3) Issue Army Radiation Permits as necessary in accordance with AR 11-9 and Chapter 2 of this regulation.

k. Each commander will—

(1) Designate, in writing, a person to be the RPO (or LSO) when required by AR 11-9.

(2) Establish a written RPP when paragraph (1) above requires the designation of an RPO (or LSO). This written plan will include—

(a) Emergency response plans, as necessary.

(b) Accident, incident, and overexposure investigation procedures.

(c) Provisions to ensure the safe use of radiation sources.

(3) Ensure that an annual audit of the RPP is performed and documented (if an RPP is required by paragraph (2) above). The audit may be performed by in-house personnel or by an outside auditor (e.g., the RPO, a staff medical physicist, an RPO from another command, etc.). The triennial survey by the USACHPPM or an RMC may be used to satisfy this requirement on the years those surveys are conducted.

(4) Ensure that all personnel occupationally exposed to radiation receive appropriate radiation protection training commensurate with potential hazards from radiation sources that they may encounter.

(5) Maintain an inventory of radiation sources as higher headquarters directs and in accordance with requirements of NRC licenses, Army reactor permits, ARAs, and technical publications.

(6) For radioactive commodities in the command, establish written policies and procedures as necessary to assure compliance with radiation

protection requirements in applicable technical publications. (See para 2-1b(1).)

l. Each MEDCOM Installation RPO will—

(1) Direct the installation radiation protection program.

(2) Advise the installation commander on radiation protection issues.

(3) Assist Table of Organization and Equipment (TOE) units on the installation to meet requirements of NRC licenses and ARAs for radioactive commodities. In particular, the installation RPO will—

(a) Assure that TOE unit personnel receive appropriate radiation protection training as necessary.

(b) Meet all reporting requirements for accidents or incidents.

(c) Assure appropriate inventory control per applicable technical publications and logistics regulations.

(4) Notify AMC when a building or area that currently or formerly contained radioactive commodities is scheduled for demolition or will no longer contain radioactive commodities. This is to provide AMC radioactive commodity license holders appropriate notice so that they can take decommissioning actions as necessary.

m. Each RPO will—

(1) Perform or ensure the performance of all radiation protection functions required by applicable Federal, DOD, and Army regulations and NRC license, Army reactor permit, and ARA conditions.

(2) Develop and implement the radiation protection program.

(3) Keep all NRC licenses and ARAs up to date by submitting amendments and renewals as necessary.

(4) Advise and assist the commander concerning radiation protection issues.

(5) Review procurement, purchases or transfers of radioactive materials or x-ray systems.

(6) Establish plans and procedures for handling credible emergencies involving radiation and radioactive materials. This includes coordination with civilian and military emergency response organizations as necessary.

(7) Review and approve all standing operation procedures (SOPs) for radiation sources used under their program. If an RPC is established, the committee will also approve SOPs.

(8) Coordinate with supporting medical personnel to help assure that personnel receive appropriate occupational health surveillance (AR 40-5).

(9) For an RPO with laser safety responsibilities, assume the responsibilities of an LSO as listed in section 1.3.2, ANSI Z136.1, except for occupational health responsibilities. (The RPO or LSO will assist the

occupational health physician as necessary in meeting laser occupational health responsibilities.)

1-6. MEDCOM RADIATION PROTECTION COMMITTEE.

a. The MRPC, if established, will be the MEDCOM Commander's advisory body to provide recommendations for MEDCOM radiation protection directives and to gather and disseminate information about the status of the MEDCOM RPP.

b. Membership will include includes the Commander, MEDCOM (or his designee) as chairperson, the MEDCOM RPSO, a representative of each major subordinate command, the Chief of the Health Physics Office at each RMC, and other members as designated by the Commander, MEDCOM.

c. The MRPC will meet at least once each 6 month period and at the call of the chair.

1-7. DEVIATIONS.

a. The Commander, MEDCOM will grant deviations only from Army radiation protection standards and procedures in accordance with AR 11-9.

b. Requests for deviation from Army standards will be submitted through the appropriate RMC to the Commander, MEDCOM.

CHAPTER 2

IONIZING RADIATION SOURCES

2-1. GENERAL.

a. All MEDCOM personnel using radioactive material or x-ray equipment will comply with applicable Federal, DOD, and DA regulations and guidance and the conditions of the NRC licenses or ARAs under which the material or equipment

b. All NRC licensees and ARA holders will ensure those individuals working with their radioactive material or x-ray equipment are aware of applicable regulations, guidance, and local policies and procedures.

c. Exposure to ionizing radiation will be kept as low as is reasonably achievable (ALARA).

d. Design and evaluation of shielding for x-ray facilities will be performed in accordance with TB MED 521.

(1) The evaluations shall be performed by a qualified expert approved by an RMC or the USACHPPM.

(2) In accordance with AR 11-9, all evaluations of designs for high radiation areas or very high radiation areas will receive an independent review. For example, if the initial evaluation is performed by an RMC then the USACHPPM or another RMC may perform the independent review.

e. Surveys of x-ray systems will be conducted prior to use for the diagnosis or treatment of human patients and periodically thereafter as specified in TB MED 521.

2-2. NUCLEAR REGULATORY COMMISSION LICENSES.

a. Any MEDCOM organization within the boundaries of the United States and it's territories and possessions that desires to use byproduct, source, or special nuclear material will obtain an appropriate NRC license prior to the acquisition or use of such material. Any MEDCOM organization outside the boundaries of the United States that desires to use such material must obtain an Army Radiation Authorization (ARA). (See paragraph 2-3.)

b. Applications for new licenses and renewals will be submitted on NRC Form 313 (or as directed by the NRC) and will be prepared in accordance with the appropriate NRC Regulatory Guides.

c. Applications for NRC licenses, renewals, or amendments will be submitted as follows:

(1) Applications involving significant changes will be sent applications through command channels to Commander, USAMEDCOM, ATTN: MCPO-SA, 2050 Worth Road, Fort Sam Houston, TX 78234-6025. Upon MEDCOM approval the application will be forwarded to the NRC. Significant amendments include, but are not limited to:

(a) New NRC licenses,

(b) Termination of an NRC License,

(c) License renewals (only if it includes a significant change in the program), and

(d) The addition or deletion of a significant capability (e.g., therapy treatment, nuclear medicine, etc.), removal of an entire building from the license, significant changes in procedures, etc. The MEDCOM RPSO may forward applications, renewals, or amendments to the USACHPPM for technical review at his/her discretion.

(2) For all other changes:

(a) The RMCs may submit the application directly to the NRC.

(b) Subordinate units will submit the application through the appropriate MSC. The MSC RPO may forward the application directly to the NRC.

d. When required, applications for renewal of NRC licenses will be submitted to MEDCOM at least 60 days prior to the expiration date of the license. MEDCOM will review the application and forward it to the NRC at least 30 days prior to the expiration date in accordance with 10 CFR 30.36.

e. Each MSC RPO will ensure that copies of all correspondence to and from the NRC concerning each NRC license are furnished to Commander, USACHPPM, ATTN: MCHB-TS-OHP, 5158 Blackhawk Road, APG, MD 21010-5403 for archival in accordance with AR 11-9.

2-3. ARMY RADIATION AUTHORIZATIONS.

a. Any MEDCOM organization that desires to use naturally occurring or accelerator produced radioactive material or a linear accelerator will obtain an ARA prior to the acquisition or use of such material. Any MEDCOM facility outside the boundaries of the United States and it's territories and possessions that desires to use any radioactive material that would otherwise be controlled by the NRC must also obtain an ARA.

b. Applications for new ARAs or a renewal of an existing ARA will be submitted on DA Form 3337, Application for Army Radiation Authorization.

(1) If the organization already possesses an NRC license that authorizes radioactive material for the same purposes as requested for the ARA material, the application need only include the following:

(a) A description of the radioactive material (including the nuclide, chemical/physical form, and the maximum quantity to be possessed),

(b) The purpose for which the material or equipment will be used, and

(c) A reference to the NRC license.

(2) If the organization is requesting radioactive material for purposes other than those authorized by their NRC license (or does not possess an NRC license), the application must include all the information that would be required for an NRC license application for those purposes.

(3) If the organization wishes to use linear accelerators, the application must include the following:

(a) A description of the linear accelerator(s) (including the manufacturer, model, serial number, and the maximum photon/electron energy),

(b) The purpose for which the linear accelerator(s) will be used, and

(c) A statement indicating that the procedures and policies in TB MED 521 will be implemented *or* the applicants program for the safe use of the linear accelerator(s) for review.

(4) Oversea organizations may reference a host nation license if one is possessed. However, additional information may be required to ensure compliance with U.S. standards.

c. Applications for new ARAs, renewal of existing ARAs, and amendments will be sent through command channels to Commander, USAMEDCOM, ATTN: MCPO-SA, 2050 Worth Road, Fort Sam Houston, TX 78234-6025. The MEDCOM RPSO may forward the applications to the USACHPPM for technical review at his/her discretion.

d. Applications for renewal of ARAs will be sent to MEDCOM at least 30 days prior to the expiration date of the ARA. ARAs for which renewal has been requested within this time frame will be deemed timely filed and will not expire until final action has been taken concerning the renewal request.

e. New ARAs, ARA renewals, ARA terminations, and ARA amendments that involve a major change in capabilities will be signed by the Commander, MEDCOM or Chief of Staff, MEDCOM. All other ARA actions will be signed by a Deputy Chief of Staff or equivalent.

f. ARAs will expire after a term of five years from the date of issue.

g. Each MSC RPO will ensure that copies of all correspondence to and from MEDCOM concerning each ARA are furnished to the USACHPPM for archival in accordance with AR 11-9.

2-4. ARMY RADIATION PERMITS.

a. A non-Army agency that will possess, use, or store an ionizing radiation source on a MEDCOM installation that would require an NRC license or ARA if possessed by an Army organization must obtain an Army Radiation Permit from the installation commander.

b. Applications for Army Radiation Permits will be through the appropriate tenant commander to the installation commander at least 30 days prior to the requested start date of the permit.

c. The installation RPO will review permit applications for adequacy and compliance with the requirements of AR 11-9 and provide oversight of the agencies activities will on Army property. The installation RPO will also maintain records of all permits granted.

CHAPTER 3

NON-IONIZING RADIATION SOURCES

3-1. GENERAL.

a. All MEDCOM facilities will establish a laser safety program IAW AR 11-9 and applicable industry standards.

b. Each installation will conduct a non-ionizing radiation survey at least once every three years in accordance with AR 11-9 and AR 40-5 to ensure compliance with safety and health regulations. The radiofrequency radiation surveys will be conducted in accordance with TB 523 and the high-intensity optical source survey will be conducted in accordance with TB 524.

c. All MEDCOM facilities will perform MEDCOM equipment studies and evaluations of any Army materiel that emit radiofrequency radiation or high-intensity light as early in the procurement process a practical, in accordance with AR 11-9 and AR 40-5.

d. All alleged radiofrequency radiation overexposures and high-intensity optical accidents and incidents will be reported and investigated in accordance with AR 11-9 and AR 40-5. (Note: Personnel exposure limits are intended to protect personnel from unintentional exposure to radiofrequency radiation and high intensity optical sources and are not intended to be applied to patients receiving therapy under a physician's care.)

e. All MEDCOM organizations will comply with the Radiation Protection Program in DOD Instruction 6055.11. All transmitters which emit radiation will comply with the radiation safety standards set forth in applicable technical publications.

f. MEDCOM organizations shall adopt no practice or conduct no operation which involves the planned exposure of personnel to radiofrequency (RF) levels which exceed the permissible exposure limits as set forth in DOD Instruction 6055.11, except when said procedure is part of a medical therapy administered at the request of an attending physician or physical therapist.

g. MEDCOM organizations shall identify, attenuate, or control potentially hazardous RF electromagnetic fields and other radiation hazards associated with Army electronic equipment by engineering design, administrative actions, protective equipment, or a combination thereof.

3-2. RADIOFREQUENCY (RF) DIATHERMY. All RF Diathermy shall be performed in accordance with AR 11-9 and TB Med 523. As a minimum, the following guidance shall be observed:

a. Safety Awareness Training. Conduct periodic awareness training on the proper use of RF diathermy equipment.

b. Limitations and Restrictions pertaining to RF Diathermy.

(1) The RF diathermy shall only be performed at the request of an attending physician or physical therapist.

(2) Minimize personnel in the treatment room/facility while RF diathermy treatment is provided.

(3) Minimize the RF output power level and duration of RF exposure needed to perform the RF therapy or RF diathermy.

(4) Do not place the patient on any grounded surfaces including metal beds, gurneys or beds with metal springs.

c. The RF Diathermy Controls. Post RF Warning Signs concerning cardiac pacemakers at entrances to Physical Therapy (PT) clinics where RF diathermy is performed. These RF Warning Signs shall be posted at all entrances at eye-level and shall be clearly visible to all personnel who enter.

d. Procedures and Methods.

(1) Ensure that medical maintenance personnel/technicians are properly trained to service, repair and/or calibrate RF diathermy equipment in accordance with manufacturer's specifications.

(2) Ensure that all RF diathermy equipment is in calibration when placed in service. All equipment that is "out of calibration" shall be tagged and removed from service until serviced, repaired and/or calibrated.

3-3. ELECTROMAGNETIC INTERFERENCE (EMI) IN HOSPITALS AND MEDICAL TREATMENT FACILITIES. The following guidance is promulgated as minimum criteria for the promotion of Electromagnetic Compatibility (EMC) and the reduction of EMI in Hospitals and MTFs:

a. Safety Awareness Training. Conduct pre-employment and periodic awareness training for Critical Care Unit (CCU) and Medical Maintenance staff on recognition and reporting of EMI associated with RF electronic equipment, including RF telemetry and RF diathermy equipment.

b. Limitations and Restrictions on the use of Wireless RF Transmitting Devices.

(1) Restrict the use of all personal wireless transmitting RF devices, including but not limited to cellular phones, pagers, computers and walkie-talkies, in Critical Care Units (CCUs), such as Intensive Care Units (ICUs), Surgical Wards and Neo-Natal Wards and Emergency Rooms.

(2) Limit the use of wireless RF transmitting devices, including but not limited to the cellular phones, pagers, computers and walkie-talkies, in Emergency Room and associated areas. Wireless RF transmit devices should only be used in these areas when used to render medical treatment.

c. EMI Controls on the use of Wireless RF Transmitting Devices.

(1) Post EMI Warning Signs restricting the use of all personal wireless RF transmitting devices, including cellular phones, at the entrance to the Emergency Rooms, Critical Care Units, Surgical Wards and Neo-Natal Wards. These EMI Warning Signs shall be posted at all entrances, at eye-level, and shall be clearly visible to all personnel who enter.

(2) Post EMI Warning Signs limiting the use of official wireless RF transmitting devices, including EMS radios and telemetry equipment, at the entrance to the Emergency Room, Critical Care Units, Surgical Wards and Neo-Natal Wards. These EMI Warning Signs shall be posted at all entrances at eye-level and shall be clearly visible to all personnel who enter.

d. Reporting of EMI incidents shall be in accordance with Paragraph 4.2.b.

CHAPTER 4

SPECIAL REPORTING REQUIREMENTS

Section I. Ionizing Radiation

4-1. GENERAL.

a. Accidents and incidents involving ionizing radiation will be reported IAW AR 385-40 when applicable.

b. Any incident or accident involving NRC licensed radioactive materials that requires reporting to the NRC will also be reported to the MEDCOM RPSO. Copies of any written reports required by the NRC will also be provided to the MEDCOM RPSO and the USACHPPM. These notifications will be provided to the MEDCOM RPSO under the same time constraints as for the notification to the NRC.

c. Any incident or accident involving ARA controlled radioactive materials or radiation producing devices will be reported to the MEDCOM RPSO and the USACHPPM as prescribed below.

4-2. LOSS OR THEFT OF RADIOACTIVE MATERIAL. The RPO will report the loss or theft of ARA controlled radioactive material as follow:

a. Immediately after the loss or theft of ARA material in an aggregate quantity greater than or equal to 1000 times the quantity specified in Appendix C to 10 CFR part 20 becomes known.

b. Within 30 days after the loss or theft of ARA material in a quantity greater than 10 times the quantity specified in Appendix C to 10 CFR part 20 becomes known.

c. The notification in (1) and (2) above will be made by telephone to the MEDCOM RPSO.

d. Within 30 days after any telephonic notification, a written report will be forwarded to the MEDCOM RPSO with a copy furnished to the USACHPPM. The written report shall include, as a minimum -

(1) A description of the licensed material involved, including kind, quantity, and chemical and physical form; and

(2) A description of the circumstances under which the loss or theft occurred; and

(3) A statement of disposition, or probable disposition, of the licensed material involved; and

(4) Exposures of individuals to radiation, circumstances under which the exposures occurred, and the possible total effective dose equivalent to persons in unrestricted areas; and

(5) Actions that have been taken, or will be taken, to recover the material; and

(6) Procedures or measures that have been, or will be, adopted to ensure against a recurrence of the loss or theft of licensed material.

4-3. DEFECTIVE OR NONCOMPLIANT PACKAGES. The RPO will report defective or noncompliant packages or ARA controlled radioactive materials immediately when:

a. A package has removable external surface radioactive contamination in excess of 0.01 microcuries (22,000 disintegrations per minutes) per 100 square centimeters of package surface; or

b. Radiation levels in excess of 200 millirem per hour at the external surface or in excess of 10 millirem per hour at three feet from the external surface.

4-4. INCIDENTS OR ACCIDENTS. The RPO will report immediately any incident or accident involving ARA controlled radioactive materials or radiation producing devices in which individuals may have been exposed to ionizing radiation as follows:

a. Immediately notify the MEDCOM RPSO if the radiation incident has or may have caused an individual to receive a total effective dose equivalent to 25 rems (0.25 Sv) or more; or an eye dose equivalent of 75 rems (0.75 Sv) or more; or a shallow-dose equivalent to the skin or extremities of 250 Rads (2.5Gy) or more.

b. Immediately notify the MEDCOM RPSO if the the incident resulted in or may have resulted in the release of radioactive material, inside or outside of a restricted area, so that, had an individual been present for 24 hours, the individual could have received an intake five times the annual limit on intake (the provision of this paragraph do not apply to the locations where personnel are not normally stationed during routine operations).

c. Notify the MEDCOM RPSO within 24 hours if the incident has or may have caused an individual to receive in period of 24 hours a total effective dose equivalent exceeding 5 rems (0.05Sv); or an eye dose equivalent exceeding 15 rems (0.15Sv); or a shallow-dose equivalent to the skin or extremities exceeding 50 rems (0.5Sv).

d. The notification in (1), (2), and (3) above will be made by telephone to the MEDCOM RPSO.

e. Within 30 days of any telephonic notification a written report will be forwarded to the MEDCOM RPSO with a copy furnished to the USACHPPM. The written report shall include, as a minimum -

(1) The date and time of event,

(2) The radiation producing device or source involved, including national stock number(NSN), radiation characteristics, and parameters of the event.

(3) A description of the incident, including names and Social Security Number (SSN) of personnel affected, estimated doses, contamination levels, facilities effected, etc.

(4) Action(s) taken to prevent recurrence.

(5) Recommendations to prevent similar occurrences at other installations using similar sources or devices.

(6) Name and Telephone number of RPO.

(7) A statement of when any other applicable agencies were notified.

4-5. MISADMINISTRATIONS. The RPO will report a misadministration involving ARA radioactive materials or medical linear accelerator to the MEDCOM RPSO by telephone within 24 hours when:

a. If due to errors in the calibration, exposure time, treatment geometry, or other factors-

(1) A therapeutic radiation dose is administered to the wrong patient, to the wrong treatment site, or by the wrong mode of treatment, or

(2) The administrated total dose differs from the total prescribed dose by more than 20 percent.

b. In the event of a therapy misadministration involving in linear accelerator, the activity shall also notify the Command Judge Advocate within 24 hrs of discovering misadministration.

c. Within 15 days after initial telephonic notification of a therapy misadministration, the activity shall send a written report to the MEDCOM RPSO.

4-6. RECORDS.

a. Each ARA holder shall maintain records of the radiation protect ion program, including

(1) The provisions of the program; and

(2) Audits and other reviews of program content and implementation

(3) The ARA holder shall retain the records in (1) until the ARA is terminated. The ARA holder shall retain the records in (2) for 3 years after records is made or as directed by Army Regulations.

b. Each activity shall retain a record of each misadministration for 10 years. The record must contain-

(1) The names of all individuals involved in the event (including the physician, allied health personnel, the patient, and the patient’s referring physician)

(2) The patient’s SSN or Identification number, if one has been assigned.

(3) A brief description of the event.

(4) The effect on the patient.

(5) The action taken, if any, to prevent recurrence.

Section II. Non-ionizing Radiation

4-7. MICROWAVE AND RF RADIATION OVEREXPOSURE. Incidents of alleged RF overexposure shall be documented and reported in accordance with AR 11-9, AR 40-5, AR 385-40 and TB Med 523. As a minimum, the following procedures shall be observed:

a. A patient suspected of receiving a RF radiation overexposure shall receive a medical evaluation as defined in paragraph 4-2.a(4) within 24 hours.

b. The USACHPPM Radiofrequency/Ultrasound (RFUS) Program shall be contacted by telephone (DSN 584-3353) within 24 hours after an alleged RF overexposure. The USACHPPM RF personnel shall conduct an investigation of the alleged RF overexposure to determine if any RF overexposure may have occurred and whether the RF exposure exceeded five times the permissible exposure limit (PEL).

c. The MTF Preventive Medicine Service shall file an incident/accident report using the Medical Surveillance System. The following information shall be included in the report under the comments category: The date, time and location of RF overexposure, the nomenclature of suspected source of RF overexposure, a brief synopsis of the incident, a preliminary medical analysis and a POC for additional information.

d. The following diagnostic protocol shall be performed by an optometrist, ophthalmogist or a qualified medical physician if it is determined that the patient did receive an overexposure that exceeded five times the PEL:

(1) An ocular history with emphasis on previous eye injury or disease and the use of medications, especially those with photosensitizing side effects.

(2) Distance Visual Acuity (with correction) in each eye. If the corrected distance visual acuity is less than 20/20 in either eye, then a refraction will e performed to obtain the best corrected visual acuity.

(3) A “slitlamp” biomicroscope examination of the cornea, crystalline lens and other structures accessible to this instrument, recording as a minimum the presence or absence of opacities in the ocular media.

e. Follow-up medical treatment as determined by the attending optometrist, ophthalolist or medical physician.

4-8. ELECTROMAGNETIC INTERFERENCE (EMI) INCIDENTS. An EMI incident occurs when electromagnetic or microwave energy from one electronic device corrupts, alters or otherwise degrades the performance of another electronic device. All EMI incidents shall be documented and reported in accordance with TB Med 523. As a minimum, the following procedures shall be observed:

a. Medical staff shall report all incidents or suspected incidents of EMI to the Radiation Protection Officer and the Medcal Maintenance Department. The following information shall be included: the type of equipment affected, the suspected source of EMI, the date, time and location of occurrence, any symptoms observed as a malfunction or interference and a POC for additional information.

b. The Radiation Protection Officer shall archive and retain all EMI incident reports for use in future comparisons.

c. A copy of the report shall be forwarded to USACHPPM Radiofrequency/Ultrasound (RFUS) Program (DSN 584-3353) for evaluation within 48 hours.

d. A copy of the Medical Surveillance System report shall be retained by the Medical Maintenance Department.

4-9. SUSPECTED LASER/OPTICAL OVEREXPSOURE.

a. The special reporting requirements for suspected laser/optical radiation overexposure are given in AR 11-9 paragraph 6-1(a) and TB 524 Control of Hazards to Health from Laser Radiation.

b. Immediately evacuate personnel suspected of experiencing potentially damaging eye exposure from laser radiation to the nearest medical facility for an eye examination (See FM 8-50). Laser eye injuries require immediate specialized ophthalmologic care to minimize long-term visual acuity loss. Medical personnel should obtain medical guidance for such emergencies from the Walter Reed Institute of Research Detachment at Brooks Air Force Base (Commercial 800 473-3549).